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Will Iraq Escape the Resource Curse?

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Will Iraq Escape the Resource Curse?

by

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REPORT

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Dedication

I dedicate this report to my parents, sister, and brother for their continuing support, love, sacrifice and understanding.

This report is also dedicated to the Institute of International Education (IIE) and the Iraqi Scholars and Leaders Program (ISLP) for the scholarship and for the opportunity they have given me and other Iraqi students to open our minds toward the world.

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Abstract

Will Iraq Escape the Resource Curse?

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Some oil-rich countries suffer from a resource curse, a paradoxical situation in which a country with oil wealth has poor economic growth and social development. A country can escape the resource curse by selecting appropriate policies. Governments are responsible for utilizing the right policies and managing the natural resource revenue effectively to benefit their nation.

In this report, various economic, political, and social measurements are used to examine the fall into the resource curse by Nigeria, Iraq, and Brazil for a period of time, and the scape of Norway from the resource curse. The report also evaluates the current circumstances of Iraq to determine which direction the resource curse will take. Several recommendations are presented to direct Iraq out of the resource curse.

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CHAPTER 1: THE CURSE OF NATURAL RESOURCES

Introduction

The "Natural Resource Curse" is a phenomenon that occurs in some countries that receive wealth from oil or other natural resources. These countries are slower in terms of economic growth and social development than countries that lack natural resources. Countries that rely heavily on the income from natural resource extraction tend to be more "economically troubled, socially instable, authoritarian, and conflict ridden" than other countries in the world (Sovacool, 2010). Also, some countries that have natural resources still perform poorly, even after many years of resource extraction (Omorogbe, 2006).

Various ideas have been proposed to explain how the huge revenue from oil and gas affects nations and governments negatively. Studies have examined the relationship between resources and wars; some countries have experienced civil wars, such as the Sierra Leone civil war over diamonds, while other countries have been invaded, such as the Iraqi invasion of Kuwait. These are cases where the resources caused trouble and conflicts when governments misused the revenue for violence (Le Billon, 2004). Conflicts and wars will damage a country's economy, and eventually the oil will turn into a curse, as has happened to Iraq.

In addition to conflicts and wars, the revenue from natural resources causes a gap between rich and poor, creates corruption in institutions, and empowers cruel governments to sustain their political power (Karl, 1998: 2005). Thus, what happens as a

result of having resources confirms what the founder of the Organization of Petroleum Exporting Countries (OPEC), Juan Pablo Parez Alfonso, believed in 1975: that oil creates problems. He stated, “I call petroleum the devil’s excrement” (The Economist, May 22, 2003).

Hong Kong, Singapore, South Korea, and Taiwan are examples of countries that perform well in spite of lack of resources. They rely on a solid manufacturing sector; their economy is growing rapidly, which proves the inverse of the resource curse.

In most of the world, the revenue from oil and other resources is managed by the government. If it is managed advantageously, this revenue can be a blessing for the nations’ citizens. However, when it is managed “opportunistically” for the benefit of the elite or among government officials, it will become a curse to the nation and will create a fortune for the government (Sovacool, 2010). Norway exemplifies successful revenue management by the government. Its leaders utilize the oil money for the development of their country and for the benefit of its citizens, not for the governmental elite.

Ideally, the revenue can be used in long-term programs such as reducing poverty and good governance programs for the benefit of nations like Norway; but most oil-abundant countries such as Nigeria, Iraq, and Angola have conflicts, and corrupt, dictatorial regimes that abuse human rights (Humphreys et al. 2007).

Many factors cause the natural resource curse. Different authors have looked at different indications to determine the cause of the curse. Humphreys et al. (2007), in their book, *Escaping the Resource Curse,* summarized the most important causes: these include weak institutions, over-spending of oil revenue, insufficient investment in

education, political and economic policy, Dutch Disease, rent-seeking behavior, and volatility of oil income (Voss, 2009).

Dutch Disease results from an economic boom created by natural resource income that temporarily over-values the local currency and causes local goods to be less competitive. Rent-seeking behavior is the practice of deriving profit from the resources without contributing to productivity. Volatility of income from oil is unpredictable income because of the oil price change (Voss, 2009). Table 1 explains these three factors. Their characteristics confirm if the resource curse is found in any country.

Other studies found different measurements that can be used to determine if a country is blessed or cursed by its natural resources. These measurements can be geological, political, economic, and social. According to Sovacool (2010), geological factors include resource availability and political measurements include transparency and authorized levels of oil and gas production. Sovacool stated further that economic measurements are a combination of exports and Gross Domestic Product (GDP), government revenue, poverty rate, per capita income, and inflation rates. He defined social measurements as: education, infant mortality, food security, and life expectancy. "Curse" can be measured by examining factors such as decrease of transparency in revenue management (when the public is not aware of how their government manages oil income), increased corruption caused mostly by lack of transparency, increase in the percentage of exports relative to the total amount of oil and gas from total production, increased revenue from oil and gas with increased inflation, decrease in per capita income, decline in life standards and literacy, as well as a rise in infant mortality and

starvation. Table 2 explains the dimensions and the measurements to be observed while looking for resource curse in any country.

Analyzing political, economic, and social factors through case studies will help us understand the theory of the natural resource curse. In the following chapters of this report, three oil-rich countries Norway, Nigeria, and Brazil are analyzed to determine whether they faced or escaped the resource curse. Norway, by using its oil revenue efficiently, has escaped the resource curse, whereas Nigeria has fallen into the resource curse. Brazil faced a resource curse from the 1960's to 1980's, but after that Brazil started to escape the curse and grow economically. Due to new oil discoveries in November 2007, Brazil might face a resource curse again, but the government is implementing new strategies like Norway's and is willing to face the challenges to escape the resource curse.

These case studies are used to describe the situation in Iraq. Like Nigeria, Iraq has been a victim of the natural resource curse. It started during Saddam Hussein's rule in 1979. The country experienced wars, poverty, and sanctions until 2003, when Hussein's rule ended. After 2003, Iraq remained in the resource curse, and it may face another curse, like Brazil did, if the government is not willing to face the challenges and implement the right policies and strategies and follow Norway's lead to escape the curse.

Cause	Definition	Characteristic
Dutch Disease	An energy boom from an increase in oil prices or a large oil discovery that results in a temporary overvaluation of local currency, making domestically produced manufactured goods less competitive	• Increase in the resource sector and concurrent decrease in the tradable sector • Large current account surplus • Appreciation in the real exchange rate • Import substitution strategy through high tariffs or quotas • Decrease in foreign direct investment
Rent-seeking behavior	An increase in competition over oil windfall by public and private agents as a result of a large accumulation of resource wealth	• Large expansion of public expenditures • Inefficient social projects • Resource wealth concentrated in the hands of a few • Large government subsidies • Low taxes • High government corruption • Nationalization of the resource sector
Volatility of oil income	The volatility of oil prices makes oil income unpredictable	• Volatile real exchange rate • Volatile oil prices • Unstable term trade

Table 1: Definitions and characteristics of natural resource curse causes.

Source: modified from Voss, 2009.

Dimension	Metric	Explanation
Political	Transparency International Rating	Measures the amount of corruption within a given country. The resource curse posits that corruption will increase along with resource extraction over time
Political	Natural gas production	Measures the amount of domestic natural gas production in billion cubic feet. The resource curse predicts that gas production will increase over time so governments can extract more rents
Political	Oil production	Measures the amount of domestic oil production in thousand barrels per day. The resource curse predicts that oil production will also increase over time so governments can extract more revenue
Economic	Fuels as % of all exports	Measures the percentage of oil and gas in overall exports. The resource curse suggests that oil and gas will grow to constitute greater exports over time
Economic	% GDP in oil and gas	Measures the extent that oil and gas contribute to gross domestic product. The resource curse implies that oil and gas will crowd out other areas of economic activity
Economic	Oil and gas as % of government revenues	Measures the percentage of government revenues attributable to oil and gas taxes, royalties, and state-owned production. The resource curse posits that governments will become more dependent on oil and gas revenues over time
Economic	GNP/GNI per capita	Measures the amount of gross national product or gross national income distributed to each person of the country per year. The resource curse foretells a lowering of GNP/GNI per capita
Economic	% population below $2 a day	Measures the amount of people living in poverty (or less than US$2 per day). The resource curse would expect poverty to increase as knowledge and labor become concentrated in the oil and gas sector
Economic	Average annual rate of inflation	Measures the rate of inflation for each year. The 'Dutch disease' aspect of the resource curse argues that inflation will increase over time

Table 2: Dimensions and measurements that can be observed for natural resource curse identification.

Source: Sovacool, 2010.

Dimension	Metric	Explanation
Social	Adult literacy rate	Provides a crude measurement of the government's ability to provide education. The resource curse posits that governments will become less able to provide basic services such as education over time
Social	Infant mortality (per thousand live births)	Offers a rough measurement of health care, which would also be expected to decline in quality as governments become resource cursed
Social	Prevalence of undernourishment (% population)	Indicates a general measurement of the availability of food within a country. The resource curse suggests that undernourishment will increase as governments become corrupt and less competent
Social	Life expectancy (age/yrs)	Perhaps the most general of all indicators, it measures the overall quality of life by tracking how long people live. The resource curse suggests that life expectancy will deteriorate

Table 2: Dimensions and measurements that can be observed for natural resource curse identification (continued).

Source: Sovacool, 2010.

CHAPTER 2: NATIONAL RESPONSES TO THE RESOURCE CURSE

This section discusses three case studies from different parts of the world and examines whether the oil-rich countries involved are immune to or subject to the resource curse.

2.1 NORWAY

Norway is a one of the developed countries, located in northern Europe. Norway is a Scandinavian country that is bordered by Sweden and Denmark. It has a population of 4,691,849. Figure (1) shows a map of Norway and brief facts about the country.

Figure 1: Map of Norway

Location: Northern Europe, bordering the North Sea and the North Atlantic Ocean, west of Sweden

Government type: Constitutional monarchy
Area: 323,802 sq km

Population: 4,691,849
World population rank 118

Population below poverty line: N/A

Labor force: 2.59 million (2010)
Infant mortality rate: total: 3.55 deaths/1,000 live births

Oil reserves: 6.68 billion bbl (2010)
World oil revenue rank: 21

Oil production: 2.35 million bbl/day (2009)
World oil production rank: 14

https://www.cia.gov/library/publications/the-world-factbook/geos/no.html

Source: ***http://www.maps-guide.net/norway/maps.htm***

2.1.1 RESERVES, PRODUCTION, AND EXPORT

Norway has a variety of natural resources; the most noticeable is oil and natural gas reserves. Oil was discovered in 1969 and production started in 1971. More reserves were discovered in subsequent years; there were 50 producing oil fields in 2008 (Gardner, 2008). Currently, Norway has the largest oil reserves in Western Europe; on January 1, 2010, it had 6.68 billion barrels of proven oil. The oil reserves are located offshore on the Norwegian Continental Shelf (NCS).

Norway's oil production is continually increasing; oil production was 2.35 million bbl/d in 2009. In addition to the wealth created by oil production, export brings a huge amount of revenue to the country. Norway was able to sell 90% of its discovered reserves in 2008 (Gardner, 2008). In 2009, the estimated export was 2.15 million bbl/d. Norway is considered as the largest exporter in Western Europe. According to the Norwegian Petroleum Directorate, the export value is 22% of GDP and 27% of the government's revenue (Energy Information Administration (EIA), 2010). Figure 2 illustrates Norway's oil net production, consumption, and export.

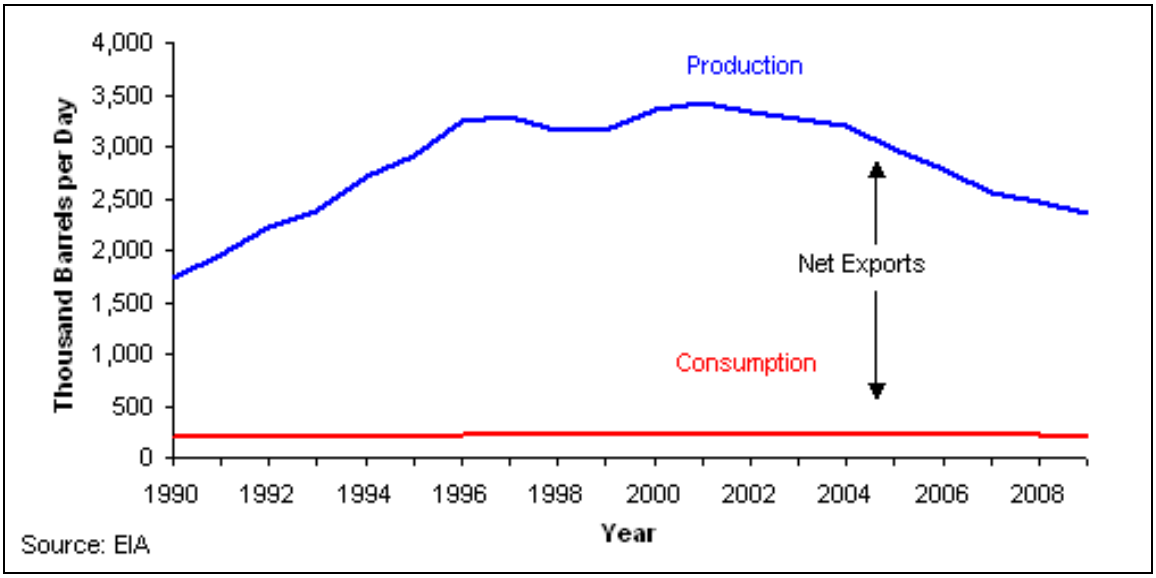

Figure 2: Norway's total oil production, consumption, and exports 1999-2009.

Source: http://www.eia.doe.gov/cabs/Norway/pdf.pdf

2.1.2 NORWAY'S RESPONSE TO THE RESOURCE CURSE

Oil discovery has made changes in the standard of living and has increased the GDP in Norway. Compared to other Scandinavian counties, Norway experienced an immediate growth after discovering oil in 1969, growth that has exceeded the growth of its neighbors, Sweden and Denmark. Studies show that there was a noticeable change in GDP after the oil discovery, as shown in Figure 3, which illustrates this rapid growth (Larsen, 2003). According to the Central Intelligence Agency (CIA) website, the Norwegian GDP per capita in 2010 was $59,100 (2010 estimates).

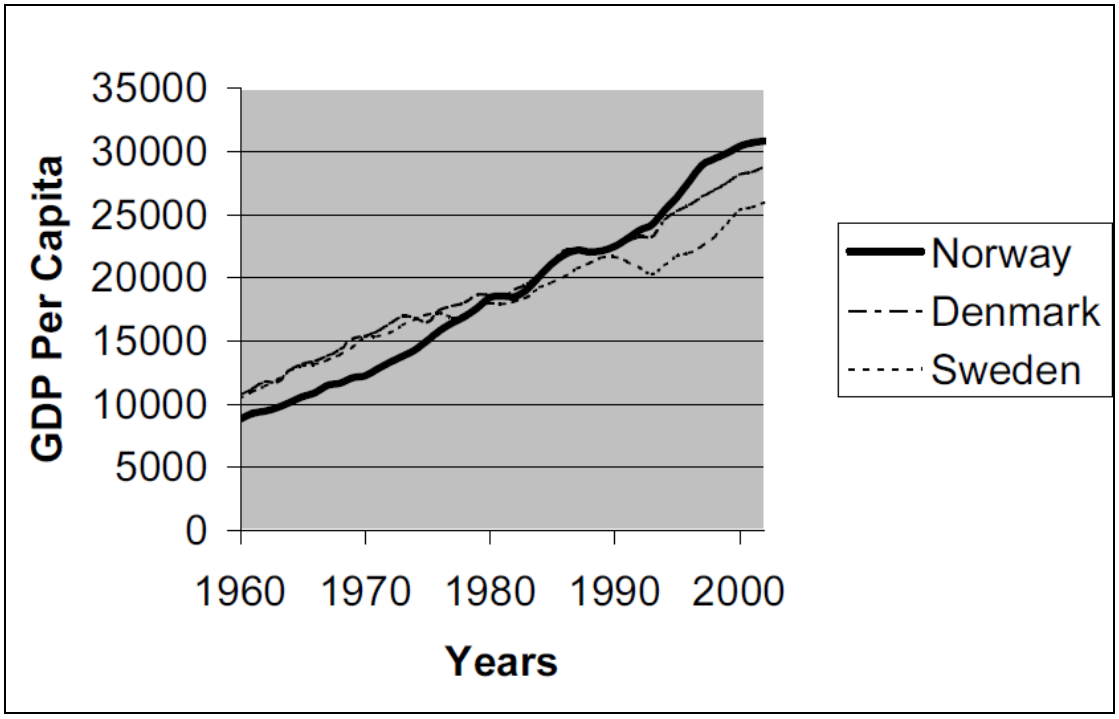

Figure 3: GDP Per Capita, Scandinavia, 1960-2002. U.S. 1999 Dollars, PPP (Purchasing Power, a method for converting real GDP per capita in national currency to US Dollars) Source: Larsen, 2003.

Norway has used its oil to promote its other industries. The discovery of oil helped to connect the manufacturing sector and oil. For instance, shipbuilding is a well-known industry in Norway, but in the late 1970's the industry faced significant challenges. The oil industry helped it to survive when the shipyards began to manufacture equipment for oil drilling and transportation. This example illustrates a method of avoiding Dutch Disease, by combining manufacturing and oil sectors (Voss, 2009).

Norway has social considerations and follows a policy to benefit its citizens by saving money for the future. Health-care expenses and pensions will increase in the future, as the population is expected to age rapidly in coming years. In 1990, Norway announced a plan for saving a portion of oil revenue for the future.

Another successful strategy of Norway is its Stabilization of Wealth or Sovereign Wealth Fund (SWF), which is the Norwegian government pension fund from oil revenue. Many countries depend on SWF for increasing revenue and investment. It is allocating some of the revenue from oil to a separate management authority in order to invest in higher return assets so as to help in volatile price situations and to diversify the country's investment. SWFs can also be used as stabilization funds to provide short-term budgetary support for the state as well as for activities such as investing in domestic companies operating within the country so that they can grow and create more domestic jobs, or using the high returns from SWF investments to create social programs (Saevitzon and Schmitz, 2008).

Kern (2007, P.2) defined the Sovereign Wealth Fund as follows:

> Sovereign wealth funds – or state investment funds – are financial vehicles owned by states which hold, manage or administer public funds and invest them in a wider range of assets of various kinds. Their funds are mainly derived from excess liquidity in the public sector stemming from government fiscal surpluses or from official reserves at central banks. SWFs can be categorized into two types of funds according to their primary purpose. On the one hand, so-called stabilization funds aim to even out the budgetary and fiscal policies of a country by separating them from short-term budgetary or reserve developments which may be caused by price changes in the underlying markets, i.e. in oil or minerals, but also in foreign exchange conditions. On the other hand, savings or intergenerational funds create a store of wealth for future generations by using the assets they are allocated to spread the returns on a

> country's natural resources across generations in an equitable manner. Even though similar in their purpose and investment behavior to other forms of funds – such as pension funds, investment funds and trusts, hedge or private-equity funds – SWFs essentially differ from the former as they are not privately owned, raising important questions in terms of financial market policy and corporate governance.

In addition to the above, Norway has used an excellent strategy of oil revenue management to promote economic growth, which is transparency. According to Revenue Watch Index, as a measure of transparency, in 2010 Norway ranked second after Brazil for making public detailed information about key resources. Norway's success in managing its oil revenue is based on: successful methods of distribution, lack of disagreement about the distribution, the use of educated expertise in revenue management, the existence of effective political and economic institutions, and an export commodity. These factors explain Norway's sudden increase in growth, its positive use of its resources, and its avoidance of rent-seeking behavior (Larsen, 2005).

By avoiding the negatives of Dutch Disease and rent seeking-behavior, enjoying the benefits of transparency as well as conflict- and corruption- free political institutions, Norway has escaped the resource curse. It has turned the possession of oil into a blessing rather than a curse.

2.2 BRAZIL

Brazil is the largest country in South America. It is bounded by the Atlantic Ocean to the east and has a coastline of more than 4,600 miles. It is the world's fifth largest country, with a population of 201 million. Figure 4 shows a map of Brazil and brief facts about the country.

Figure 4: Map of Brazil.

Source: http://www.infoplease.com/atlas/country/brazil.html

Location: Eastern South America, bordering the Atlantic Ocean
Government type: Federal Republic

Area: 8,514,877 sq km

Population: 203,429,773

Global population rank: 5th

Population below poverty line: 26% (2008)

Labor force: 103.6 million (2010)

Infant mortality rate: total: 21.86 deaths/ 1,000 live birth.

Oil reserves: 13.2 billion bbl (2010)
World oil revenue rank: 17th

Oil Production: 2.572 million bbl/day (2009)
Global oil production rank: 9th

https://www.cia.gov/library/publications/the-world-factbook/geos/br.html

2.2.1 RESERVES, PRODUCTION AND EXPORTS

Like Norway, Brazil has relied on oil revenue since oil was discovered in 1939. Brazil has 12.9 billion barrels of proven oil reserves in 2011, the second-largest in South America after Venezuela. Oil production has experienced several stages of failure and success. Initial production was 2700 barrels per day in 1950, which increased to 2.28 million barrels per day in 2007. The country's oil production in 2010 was 2.7 million barrels per day (6 percent) higher than in 2009 and reached 2.9 million bbl/d in 2011 (Energy Information Administration (EIA), 2011). Petrobras, the oil company that initiated oil production in Brazil, has suffered from dictatorship and economic problems, but it has survived and flourished. It is now the leading exporter and one of the largest companies in the country (Puccini, 2009). Exports should rise in the future because of the recent pre-salt discoveries that will increase production. According to the Short-Term Energy Outlook, net exports will continue through the end of 2012 (Energy Information Administration (EIA), 2011). Figure 5 illustrates oil production and consumption in Brazil from 2002 to 2012.

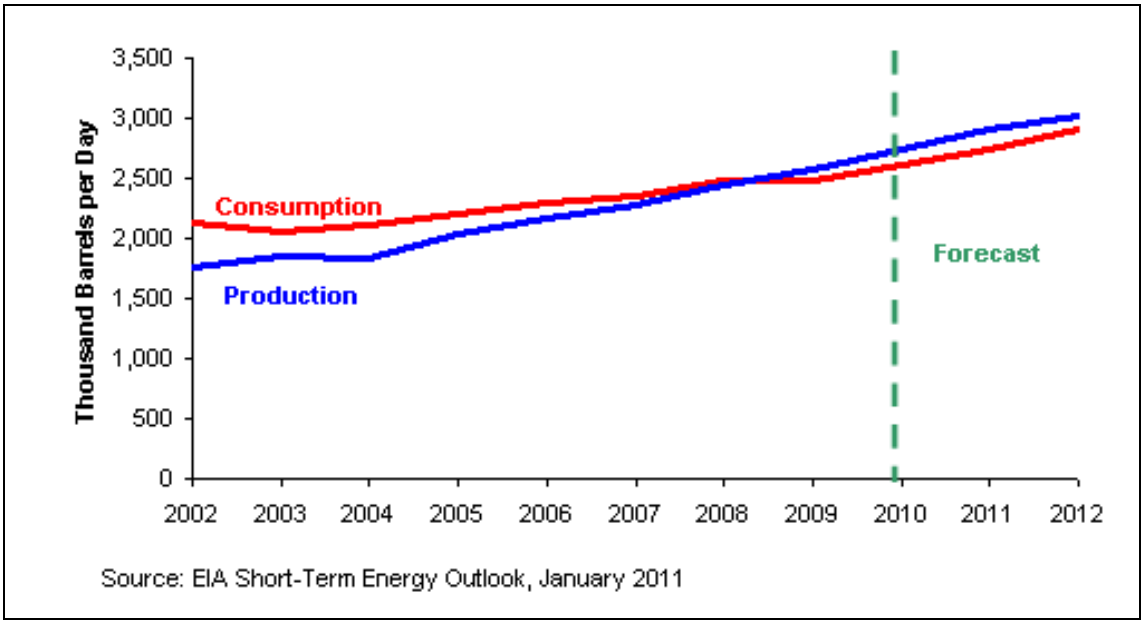

Figure 5: Brazil's liquid fuels production and consumption 2002-2012.

Source: http://www.eia.doe.gov/emeu/cabs/Brazil/pdf.pdf

2.2.2 THE IMPORTANT NEW OIL DISCOVERIES OF BRAZIL

A new deep-water exploration discovery was announced in 2007 by Petrobras, the Brazilian national oil company. Tupi field is located in the Santa Basin, 155 miles off southern coast of Brazil. It has 5-8 billion barrels of oil. It is estimated to produce 1 million b/d in 2012. Brazil's plan is to invest $174 billion from 2009 to 2013 to help expand daily production through the development of Tupi field. Several discoveries followed after Tupi field was discovered, with total reserves estimated as 80 billion barrels of oil equivalent in the Santos Basin. This discovery will lead Brazil to be a major exporter and a potential member of OPEC in the coming years, and eventually Brazil

should be the primary Latin American oil supplier. The Brazilian government's interest in private ownership of oil reserves increased after the new oil discovery in 2007. The government withdrew 41 deep-water blocks in the Santos Basin from the ninth bidding round and held more offshore blocks in the tenth bedding round. The current discussion is about raising oil sales and associated taxes or changing the contacts from private contracts to production sharing with Petrobras. The feeling of nationalism has also increased since the new discovery. The government is thinking of creating a separate state-owned oil company to extract Tupi field oil (Voss, 2009).

2.2.3 BRAZIL'S RESPONSE TO THE RESOURCE CURSE

Brazil experienced a resource curse from the 1960s to the mid 1980s. The export-to-GDP ratio remained at 8% throughout that period. High tariff and quotes were imposed on Brazil through the inward-looking development strategy by countries like Argentina and Mexico. This resulted in preventing Brazil from competing internationally. In the 1960s and 1970s, there was a short-term boom because of the import-substitution strategy that focused on creating capital intensive growth in the manufacturing sector. This situation led to lack of demand for moderately skilled workers and did not create encouragement for education. It had a long-term negative impact on Brazil (Voss, 2009).

In a study about Brazil describing its resource curse in, (Voss, 2009, P42) explained:

> The protection of the domestic producers of tradable goods also reduced their international competitiveness. Since Brazilian firms did not need to compete internationally, the government and employers were less resistant to rent-seeking behavior by workers. This lack of market discipline in Brazilian labor market allowed the labor force to organize in order to seek high wage premiums. These

> resource rents provided a financial basis for the organization of the working class. This inefficiently raised costs for the domestic producers of tradable goods. To compensate for the higher labor costs, many firms raised their domestic prices making them less competitive internationally.

The oil industry is competitive in Brazil. The government changed its strategy after the curse. For the last 18 years, the government has pursued a trade liberalization policy, and the economy has become more open. Trade has increased considerably from 14% of the GDP in 1988 to 30% of GDP in 2006 (Voss, 2009). Brazil has succeeded not only in production but also in exports. Whereas the annual rate of global exports increased by 8.5%, the annual rate of exports by Brazil has increased 22%. This new export strategy helps diversify exports of a variety of products, but oil exports still dominate. Figure 5 explains oil production and consumption in Brazil.

Transparency is an essential focus in revenue management because it enables citizens to trust their governments and to know to what extent the government is using the revenue for the country's economic growth and social programs. The government of Brazil openly discloses information about its revenues and expenditures. For this purpose, the government's website contains data for the public as well as about participation in the stock exchange. The public has had access to the webpage since 2004. Available information includes the federal government's expenditures for purchases and service contracts for public projects. Brazil ranked first in 2010 for the government's openness in oil, gas and mining management. Furthermore, transparency decreases the degree of corruption by the government and increases political stability (Revenue Watch Index, 2010).

Like the government, the partly state-owned oil and gas exploration and production company, Petrobras, is transparent; it follows accounting standards that are recognized internationally. Petrobras is publicly listed on the international stock exchange. Production reports and financial statements are submitted to the U.S. and Brazilian Securities and Exchange Commissions. Citizens can also have access to its financial data such as main taxes, royalties, special contributions, as well as its payments to the government of Brazil, through the Petrobras website on

http://www.petrobras.com.br/pt/ (Revenue Watch Institute).

Voss (2009) summarized three reasons that Brazil might fall under the influence of the "natural resource curse" again:

1- The oil exports from the Santos Basin will increase oil revenue; thus, Brazil might face Dutch Disease.
2- The income "disparity" that causes unequal growth might increase rent-seeking behavior.
3- The global demand for oil increases the instability of oil prices.

In the meantime, Brazil is attempting to resist and prevent the natural resource curse, in spite of the above-mentioned possibilities.

To avoid the resource curse, Brazil intends to create a stabilization fund similar to Norway's. This will help provide reserves for consistent expenditure during the boom-and-bust cycles. Shifting from importing substitution to trade liberalization creates competition in business and favors the development of an internal economy.

Privatization of Petrobras and investment in innovation and R&D promote transparency at the political and corporate levels. These measures of promoting transparency will decrease corruption. Diversification of exports reduces dependency on oil exports during boom-and-bust cycles that diminish the effect of the natural resource curse (Voss, 2009).

In addition to the above, the government of Brazil has recently improved its fiscal management and monetary policy. This improvement can be seen in the following: economic growth, stabilization of the inflation rate, a decrease in public debt, and a slowdown in the exchange rate appreciation, and the implementation of a forward-looking policy (Voss, 2009).

Thus, Brazil faced the resource curse during the 1960s to mid 1980's. It might fall into the curse again in the future after the new pre-salt discovery. But the Brazilian government is prepared and implements strategies, follows successful models, and advances their revenue management in order to avoid the resource curse, as Norway has done.

2.3 NIGERIA

Nigeria is a developing country that has been a member of OPEC since 1971. Nigeria is located in western Africa, bordering the Gulf of Guinea, between Benin and Cameroon, as shown in Figure 6. As the most populous country in Africa, Nigeria is 8th in world population, having 152,217,341 people.

Figure 6: Map of Nigeria.

http://www.infoplease.com/atlas/country/nigeria.html

Location: Western Africa
Government type: Federal republic

Area: 923,768 sq km

Population: 152,217,341
World population rank 8th

Population below the poverty line: 70%
Labor force: 48.33 million (2010)
Literacy: 68%

Infant mortality rate total: 92.99 deaths/ 1,000 live births
Global infant mortality rank: 10th

Oil reserves: 37.5 billion bbl (2010)
Global oil reserve rank: 10th

Oil production: 2.211 million bbl/day (2009.)
Global oil production rank: 15th

https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html

2.3.1 RESERVES, PRODUCTION, AND EXPORT

Oil was discovered in the Niger delta in 1956. Today Nigeria has the second largest oil reserves in Africa. As of January 2010, Nigeria had 37.2 billion barrels of proven oil reserves, according to the *Oil and Gas Journal*. Furthermore, it is considered the largest oil producer in Africa. Oil production in 2009 was slightly more than 2.2 million bbl/d. Nigeria receives wealth from oil exports as well. About 76% of government revenue comes from export. Nigeria is the fifth largest foreign oil supplier to the United States; in 2009 approximately 1.9 million bbl/d were exported from the total production (Energy Information Administration (EIA), 2011). Figure 7 shows Nigeria's oil Production, consumption and export/.

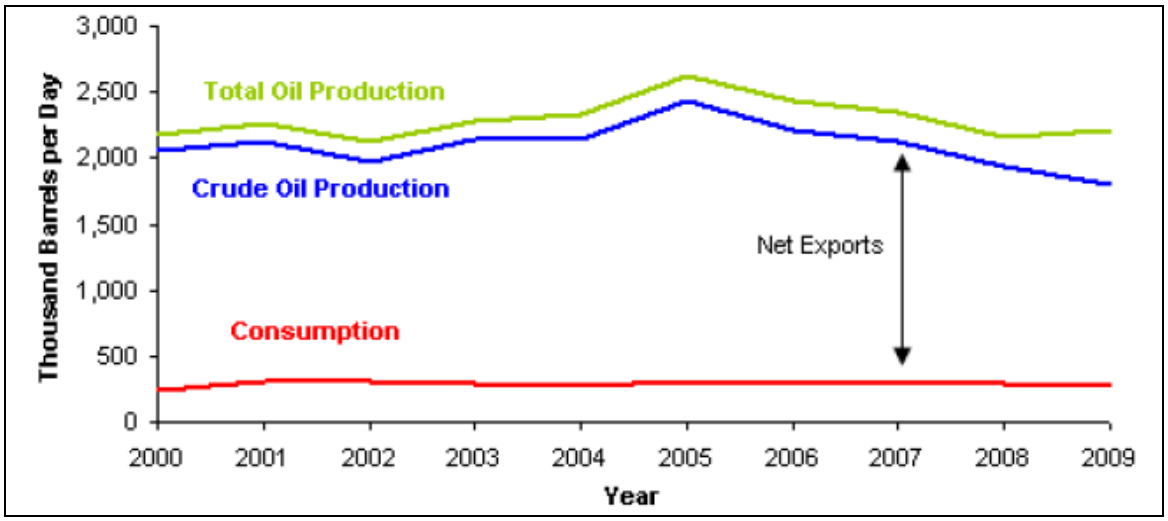

Figure 7: Nigeria's oil production, consumption, and exports 2000 - 2009.

Source: http://www.eia.doe.gov/emeu/cabs/Nigeria/pdf.pdf

2.3.2 NIGERIA'S RESPONSE TO THE RESOURCE CURSE

At present, Nigeria's economy is dependent on the oil sector, whereas agriculture was the dominant sector prior to the oil discovery. The oil boom increased the oil industry and revenue in 1970. This resulted in a decline in agricultural production, the immigration of laborers from rural to urban areas, and eventual food price increases. The GDP's agriculture share declined from 68% to 35% between 1965 and 1981 (Voss, 2009). According to the Federal Research Division of the Library of Congress, agriculture composed more than 40% of GDP. From the 1970's to 1980's the general agricultural output per capita, food specifically, declined as oil production exceeded agriculture compared to the period of 1969-1972, as shown in table 3. In comparison with the rest of the developing world, Nigeria's agriculture and food production was lower in 1982-1983 than in the base period, 1969-1972 (Kinney, 2009).

THE PERFORMANCE OF NIGERIAN AND DEVELOPING WORLD AGRICULTURE: 1969 - 83				
Index of Output per Capita				
	1969 - 72	1974 - 78	1979 - 81	1982 -83
Nigeria				
Agriculture	100	91	91	84
Food	100	92	92	85
Developing World				
Agriculture	100	103	105	104
Food	100	104	106	106

Table 3: The performance of Nigeria and developing world agriculture: 1969-1983

Source: Kinney, 2009.

Furthermore, the government failed to invest in the manufacturing sector. In an attempt to improve the economy, the government tried to spend oil revenue in the manufacturing sector, but there was not enough demand for manufactured products, and production did not increase. This resulted in a waste of the revenue; for example, the capacity utilization calculation for manufacturing (the level to the productive capacity of a country is used for the generation of goods, which was 77 percent in 1975, declined to 50% in 1983 and has remained at 35% since the mid 1980's. This shows how the government has wasted its investment in manufacturing and has failed to expand revenue for two decades. The failure to expand the large wealth from the oil boom and insufficient investment of revenue into manufacturing are characteristics of Dutch Disease (Voss, 2009).

Nigeria has experienced poor economic performance since its independence from Britain in 1960; corruption and mismanagement of the revenue can be factors for the slow economic performance. In 2003, Xavier Sala-i-Martin and Arvind Subramanian used several calculations to determine the economic performance of Nigeria. One of their calculations shows that the GDP per capita decreased from US$1,113 in 1970 to US$1,084 in 2000, placing Nigeria among the 15 poorest nations in the world. Furthermore, income distribution and poverty measurements show that the percentage of the population that has to survive on less than US$1 per day has increased from 36% to about 70%, as shown in figure 8. Thus, the number of poor increased from 1970, when the revenue was 19 million, to 2000, when the revenue was 90 million, as shown in figure 9. Additionally, the plot of income distribution for the years 1970, 1980, 1990, and 2000 shows a gap between rich and poor. The 2000 curve is different from the 1970 curve in that it shows a gap between the wealthy and poor as shown in figure 10. The study shows further that, due to the volatility of GDP growth, Nigeria's economy was not stable.

In short, Nigeria's poor economic performance, Dutch Disease, wasting oil revenue, increasing poverty, and gap between rich and poor through time demonstrate that Nigeria's oil has been a curse to the nation.

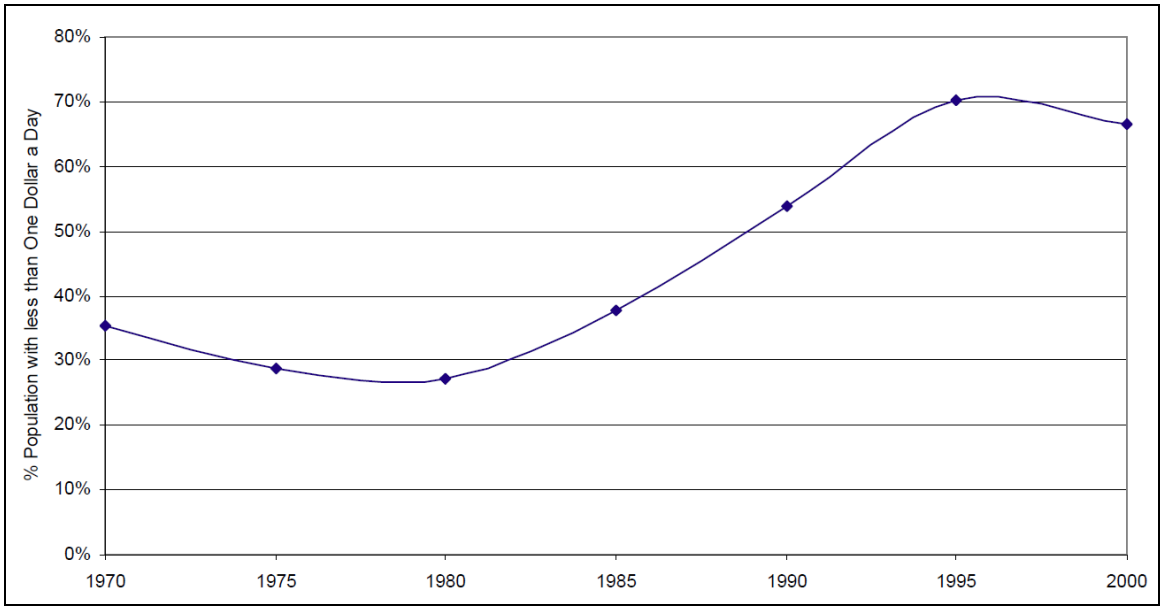

Figure 8: Nigeria's poverty rates increased from 36% in 1970 to approximately 70% in 2000. Source: Sala-i-Martin and Subramanian (2003).

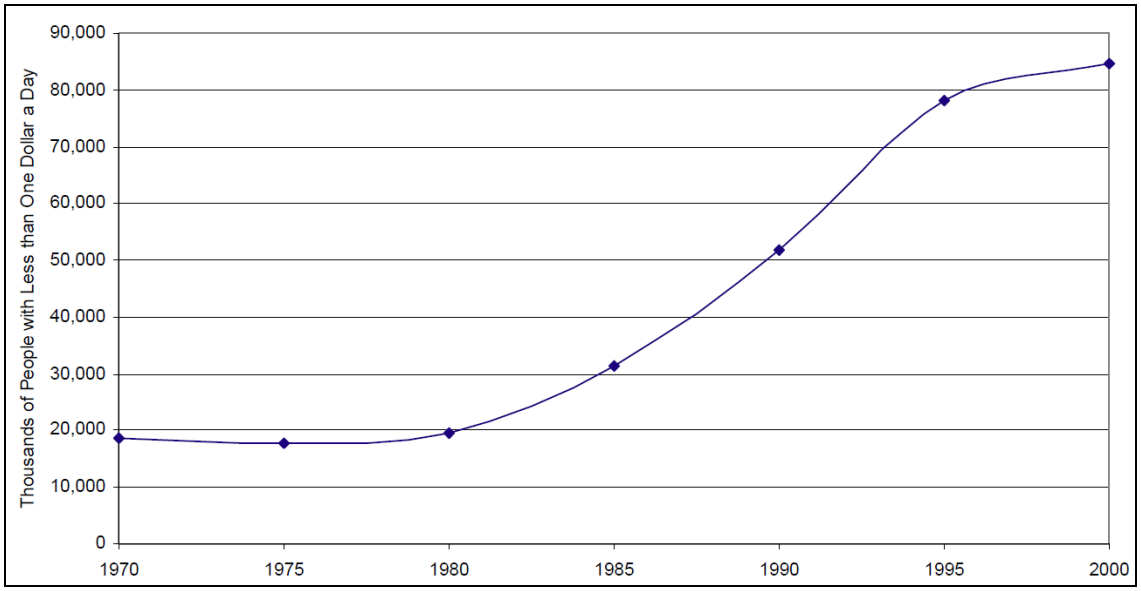

Figure 9: Nigeria's poverty count, showing that Nigeria's number of poor increased from 1970 to 2000.

Source: Sala-i-Martin and Subramanian (2003).

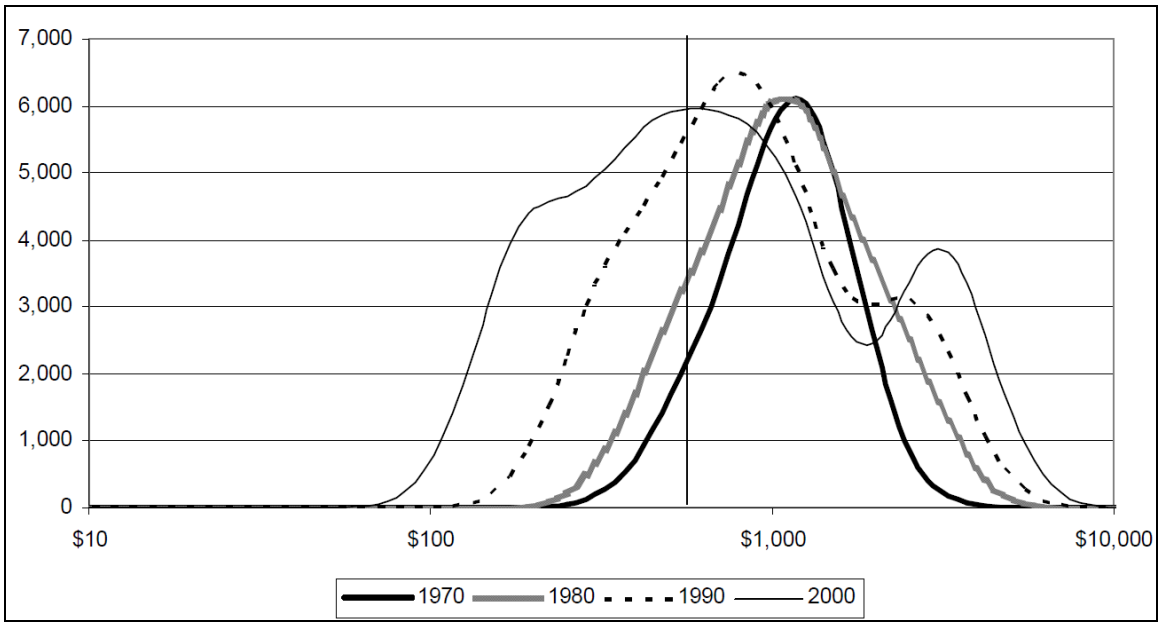

Figure 10: Nigeria's income distribution from 1970 to 2000.

Source: Sala-i-Martin and Subramanian (2003).

CHAPTER 3: IRAQ'S RESPONSE TO THE RESOURCE CURSE

This chapter will examine Iraq's situation before and after Saddam Hussein's rule, the challenges of oil revenue management, and the damage of years of war to the petroleum sector.

3.1 IRAQ

Iraq is a developing country and the founding member of OPEC. Located in western Asia, Iraq borders Iran, Turkey, Syria, Jordan, Saudi Arabia, Kuwait, and the Persian Gulf between Iran and Kuwait. Iraq has an area of 438,317 sq km and a population of 30,399,572. Figure 11 shows a map of the Iraq and facts about it.

Location: Western Asia
Middle East, bordering the Persian Gulf, between Iran and Kuwait

Government type: Parliamentary democracy
Area: 438,317 sq km

Population: 30,399,572 (2011)
World population rank: 39th

Population below the poverty line: 70% (2007)
Labor force: 8.5 million (2009)
Literacy: 74.1%

Infant mortality rate total: 41.68 deaths/1,000 live births
Global infant mortality rank: 61st

Oil reserves: 115 billion bbl (2010)
Global oil reserve rank: 4th
Oil production: 2.399 million bbl/day (2009)
Global oil production Rank: 12th

https://www.cia.gov/library/publications/the-world-factbook/geos/iz.html

Figure 11: Map of Iraq.
Source: http://www.infoplease.com/atlas/country/iraq.html

3.1.1 RESERVES, PRODUCTION, AND EXPORT

Iraq's proven reserves rank it as fourth worldwide after Saudi Arabia, Canada, and Iran. A 2001 study shows that Iraq has 115 billion barrels of proven oil, but the reserves may be higher because the 2001 study was based on 2D seismic data from three decades ago. Furthermore, the unexplored western and southern parts of Iraq were estimated to have an additional 45 to 100 billion barrels. (Energy Information Administration (EIA), 2010).

Iraq's oil resources are located in three main areas in the northern and southern parts of the country. The resources are mostly concentrated in Shiite areas in the south. The ethnically Kurdish area to the north is estimated to have 20% of the resources, and the Sunni area contains few resources. This unequal distribution creates confusion over rights to reserves between the Kurds and other groups. Accordingly, future development of Iraq's oil sector will involve serious disputes (Energy Information Administration (EIA), 2010).

Oil was discovered in the 1920's. In 1979 Iraq produced 4 million b/d and became OPEC's third largest producer after Iran and Saudi Arabia. Due to the 1990 Gulf War and the 2003 Kuwait invasion, oil production dramatically decreased, as shown in figure 12. In 2003, Iraq's estimated production was 2.5 to 2.7 million b/d, but it actually produced 1.5 million b/d. Iraq produced 2.00 million b/d, in 2004 and 1.8 million b/d in 2005. In 2006, production increased to 2.06 million b/d, but did not reach the projected

target of 2.5 million b/d (Jaffe, 2006). Oil production reached 2.4 million b/d in 2011, as shown in figure 13 (Energy Information Administration (EIA), 2010).

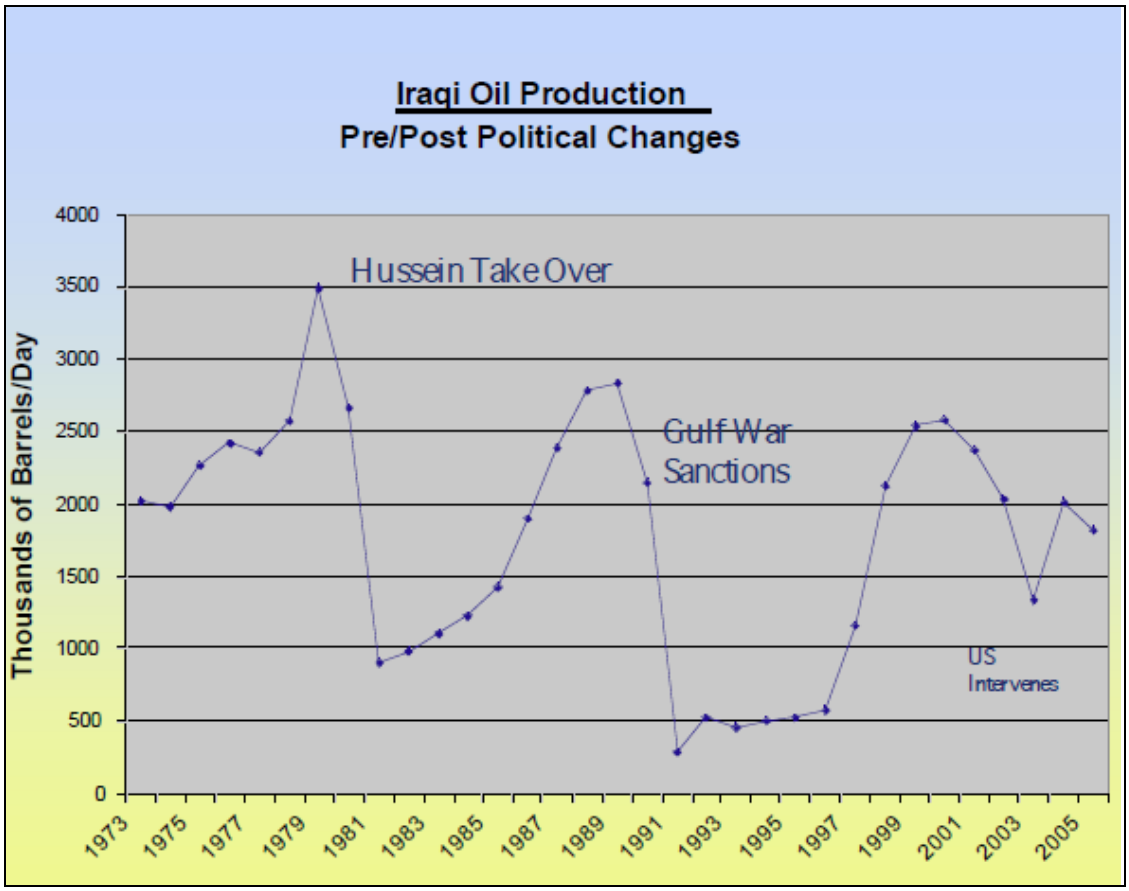

Figure 12: Iraq's oil production history from 1973 to 2005, showing dramatic declines due to war and sanctions.

Source: Jaffe, 2006.

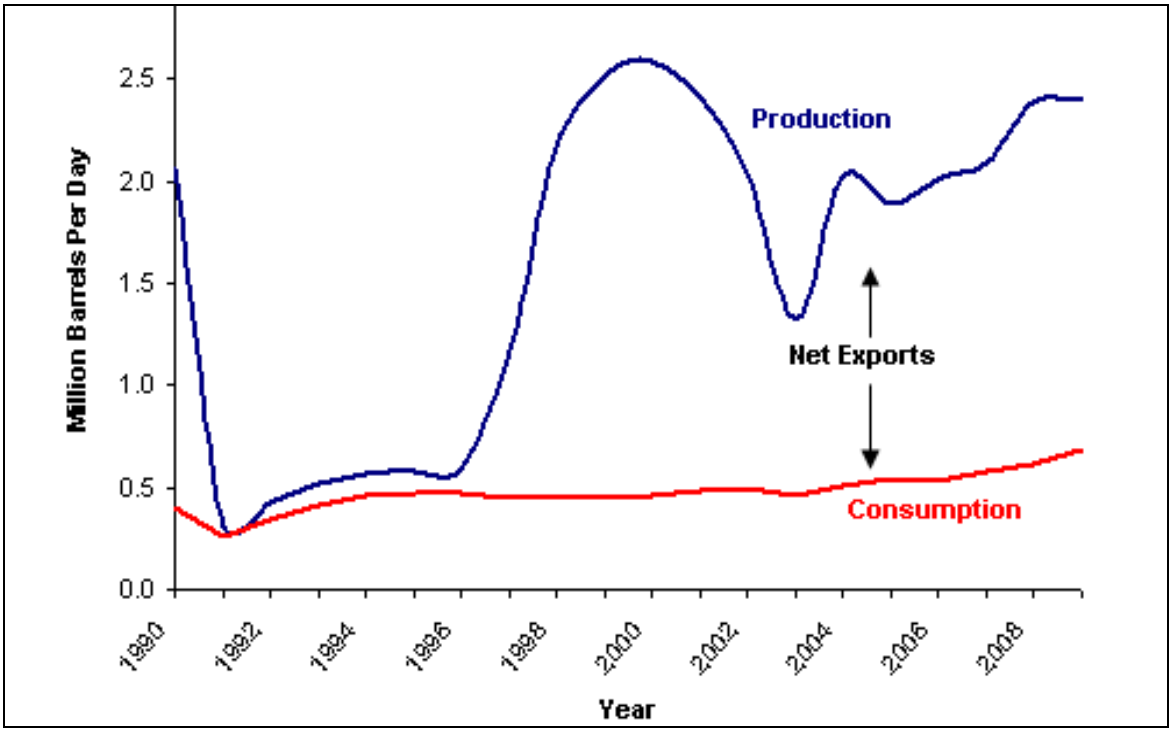

Figure 13: Iraq's production, export, and consumption of oil from 1990 to 2009.

Source: http://www.eia.doe.gov/emeu/cabs/Iraq/Full.html

Iraq's exports have faced challenges due to the chaos and unrest that started in 2003. These challenges include the export disagreement between the Kurdistan Regional Government (KRG), which is the official ruling body of the northern federated region, and the central government. Exports have declined but have started to rise again recently. In 2009, crude oil exports totaled 1.8 million bbl/d, and in February 2011 they reached 2.202 million b/d, the highest level since 2003 according to Reuters reports (Energy Information Administration (EIA) and Iraq business news, 2011).

In a Congressional Research Service (CRS) report about Iraqi oil reserves, production, and potential revenue, Lawrence Kumins (2006) calculated the revenue from exports under different production situations and price scenarios. Table 4 shows the hypothetical revenues if the security and oil fields are improved. Under any circumstances, export revenue is considered to be huge.

Exports (mbd)	Rev. @ $40/bbl	Rev. @ $50/bbl	Rev. @ $60/bbl
1.0	$15	$18	$22
1.5	$22	$27	$33
2.0	$29	$37	$44
2.5	$37	$46	$55
3.0	$44	$55	$66
3.5	$51	$64	$77

Table 4: Range of possible future Iraqi annual oil export revenue ($billion).
Source: Kumins, 2006.

According to Hussein al-Shahristani, Iraq's Oil Minister, Iraq's oil export revenue constitutes 95% of the government's revenue. He stated, "Iraq raised 171 billion dollars from sales between 2006 and 2009, which accounted for all but 5% of the government's income during those years." Shahristani said that oil raised $30 billion in 2006, $40 billion in 2007, $60 billion in 2008, and $41 billion in 2009 (Middle East online, 2010).

The production figures released by the Iraqi Oil Ministry from January 2010 to January 2011 are shown in table 5. Exports in January 2010 were 1.92 million b/d and increased to 2.20 million b/d in February 2011, which is the highest level after Hussein's regime fell in 2003. "As usual, the bulk of Iraq's production flowed to the southern port of Basra, where an average of 1.708 million barrels a day was pumped into tanker ships. The northern pipeline to Turkey exported an average of 484,000 barrels a day. That included an average of 80,000 barrels a day from Kurdistan. An additional 10,000 barrels a day were trucked to Jordan. These achievements were largely the result of foreign oil deals signed in 2009" (Musings on Iraq, 2011).

Month, Year	Average production (million barrels per day)
Jan. 2010	1.92
Feb. 2010	2.05
Mar.2010	1.84
Apr. 2010	1.80
May 2010	1.88
Jun. 2010	1.86
Jul. 2010	1.82
Aug. 2010	1.82
Sep. 2010	2.02
Oct. 2010	1.91
Nov. 2010	1.92
Dec. 2010	1.95
Jan. 2011	2.16
Feb. 2011	2.20

Table 5: Iraqi oil exports, January 2010-February 2011.

Source: http://musingsoniraq.blogspot.com/2011/03/blog-post.html

The Iraqi Oil Ministry also released the revenue figures. In January 2010 revenue was $4.441 billion, which increased to $5.222 billion in December 2010, and increased further to $6.082 billion in January 2011, as shown in table 6. The global market instability resulted in a sharp rise in oil prices. The current Middle East political situation affects the global oil price; for instance, unrest in Libya decreased its oil production by half and caused a rise in oil prices (Musings on Iraq, 2011).

In 2011, Iraq's production and oil revenue jumped for two reasons. First, increased export of Kurdistan oil after the central government allowed the Kurds to sell their oil; second, the recent political situation in Libya resulted in increased oil prices. These two factors benefitted Iraq in terms of increased revenue.

Month	Total Production (Mil/Bar)	Revenue (Billion)	Avg. Price Per Barrel
Jan. 2010	59.7	$4.441	$73.97
Feb.	57.9	$4.229	$73.04
Mar.	57.1	$4.351	$76.20
Apr.	53.0	$4.222	$79.66
May	58.7	$4.335	$73.85
Jun.	54.7	$3.889	$71.10
Jul.	56.3	$4.009	$71.21
Aug.	55.4	$3.957	$71.43
Sep.	60.6	$4.428	$73.07
Oct.	58.7	$4.526	$77.10
Nov.	57.3	$4.618	$80.59
Dec.	60.5	$5.222	$86.31
Jan. 2011	67.0	$6.082	$90.78

Table 6: Iraqi oil production and earnings, January 2010-January 2011

Source: http://musingsoniraq.blogspot.com/2011/03/blog-post.html

3.2 Iraq's response to the resource curse during the Saddam Hussein Era

During Saddam Hussein's era, oil revenue was used for violent purposes; it funded the army and fueled years of war with neighbors. Not only did the years of war cost a huge amount of money, but also Iraq had to compensate Kuwait for years afterward. For instance oil money funded the army that Saddam Hussein used to occupy Kuwait during the 1991 Gulf War. The United Nations imposed sanctions on Iraq to

compensate Kuwait for the war damage. “5 [Five] percent of Iraq's oil and gas revenue is set aside into a fund to compensate Kuwait for damages, including some $130 billion in lost oil production, of which about $25 billion remains to be paid” (Bengali, 2010). This illustrates the problem of oil revenue being in the hands of the government that misuses it for violence; this is a characteristic of rent-seeking behavior.

The Iraqi regime was corrupt, and the government controlled revenue and expenses. The budget remained secret; anyone who disclosed secrets was punished or killed. The Revenue Watch Institute website (Transperancy snapshot, March,2011) describes the revenue transparency as follows:

> Iraq is almost entirely dependent on oil and gas revenue to support state expenditures. The size and use of oil revenues was a jealously guarded secret during Iraq's years of authoritarian rule. The oil sector was nationalized in the 1960s-1970s. Since then, oil was managed first by the state-owned Iraqi National Oil Company and, after the company's abolition in 1987, by the Ministry of Oil directly.
> Oil is exported by the State Oil Marketing Organization (SOMO), a department of the Ministry of Oil. Until 1991, revenues were deposited directly in a special account at the Central Bank of Iraq.
> During the years of sanctions after the first Gulf War (1995-2003), Iraq's oil revenues had to be deposited at an escrow account at a designated international bank BNP Paribas, under the supervision of the UN Sanctions Committee. Iraqi oil revenues were subject to extensive abuse during the so-called Memorandum of Understanding years. It is estimated the government of Iraq alone was able to divert over US$20 billion away from the account through a vast network of intermediaries. United Nations staff were also implicated in abuses of Iraqi resources. Since Saddam Hussein's fall, all revenues from the export sales of petroleum, petroleum products and natural gas are deposited into the Development Fund for Iraq (DFI) that was created under United Nations Security Council Resolution 1483, dated 21 May 2003 and continued under UNSCR 1468. The DFI account is held by the Central Bank of Iraq at the Federal Reserve Bank of New York (FRBNY).
> In the immediate aftermath of the Saddam Hussein's removal, the DFI was managed by the U.S.-led Coalition Provisional Authority (CPA), until June 28, 2004, when the CPA was disbanded.

Thus it was impossible for people to even think about asking the government about oil revenue. This is called a lack of transparency in oil revenue management.

Saddam Hussein considered economic data a secret, but based on limited available data, the economic growth curve of Iraq shows a dramatic decline for the period of Saddam Hussein's reign. In 1989 the GDP stood at $38 billion when measured in constant 2003 dollars. In 1990 the GDP dropped dramatically. From that time the GDP remained at less than 30% of the 1989 value until the time that Saddam Hussein accepted the United Nations resolutions that contained 986 terms and conditions. The GDP rose from 10.6 billion in 1996 to 33 billion in 2000, and then decreased to $29 billion in 2001. Figure 14 shows the volatile trend of economic growth of Iraq from 1989 to 2003 (Central Intelligence Agency (CIA), Iraq economic data, 2004).

Iraq faced income inequality during Saddam Hussein's rule. The GDP per capita in 1989 was $2304, which decreased to $938 in 1990. Then it remained in a range no higher than $507 from 1991 until 1996. Generally, Iraqi citizens lived on limited income. Figure 15 shows the trend of Iraq's GDP per capita (Central Intelligence Agency (CIA), Iraq economic data, 2004). Compared to the economic growth curve of Norway, which was discussed in Chapter 2, Iraq's economy did not grow as it should have given its oil wealth similar to Nigeria's decline in economy and GDP. Nigerian's and Iraqi people remained poor for decades and had difficulty making a living, while Norway's oil increased its GDP and improved the standard of living of its citizens after the oil discovery.

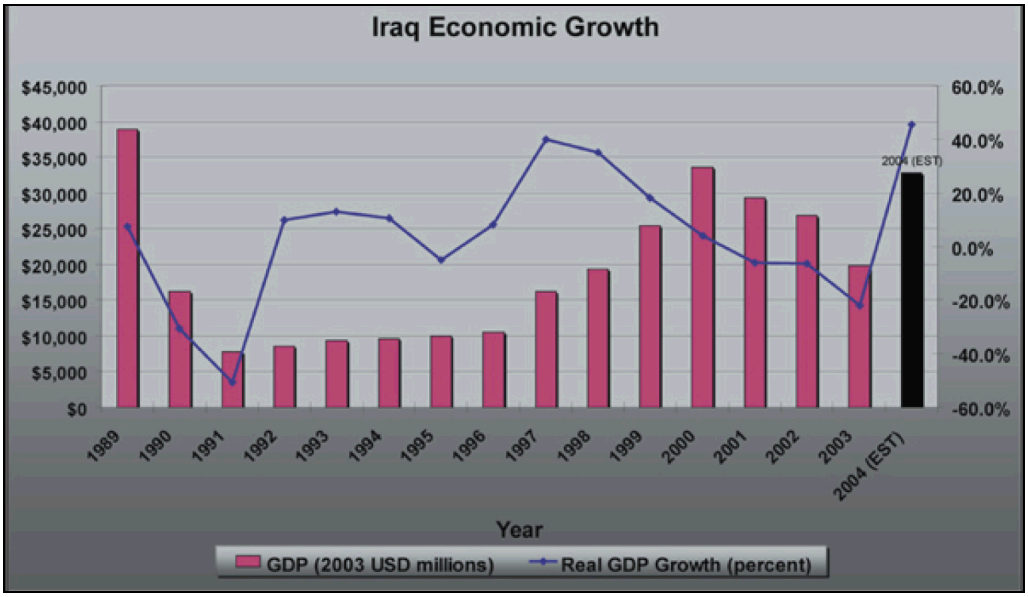

Figure 14: Economic growth trend of Iraq from 1989 to 2003.

Source: https://www.cia.gov/library/reports/general-reports-1/iraq_wmd_2004/images/ch2_anxD_img01.jpg

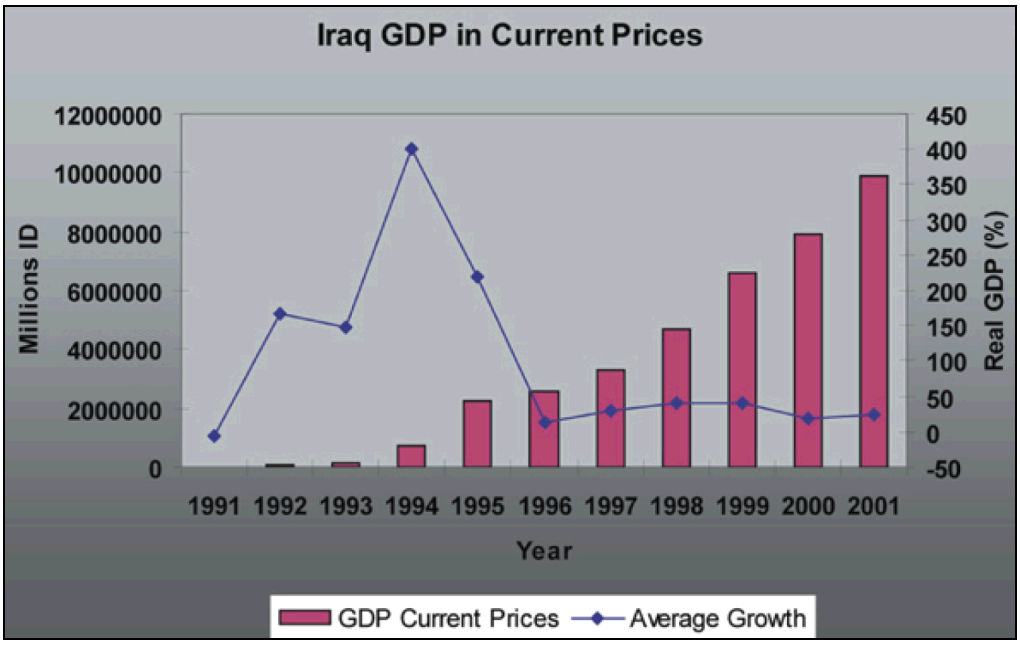

Figure 15: Iraq GDP in current prices.

Source: https://www.cia.gov/library/reports/general-reports-1/iraq_wmd_2004/chap2_annxD.html

In addition to wasting the oil revenue to fund the army and war, Saddam Hussein increased Iraq's debt. During the Iran-Iraq war from 1980 to 1989, Iraq spent $54.7 billion on its army. Iraq's payment of short-term debts to western creditors was estimated to be $35 to $45 billion at high interest rates. An estimated $35 billion was for military debt. Through the Paris Club, the former Soviet Union and Russia gave loans to Iraq. These loans were used to support the military programs during the 1980s. Figure 16 shows Iraq's Paris Club creditors (Central Intelligence Agency (CIA), Iraq economic data, 2004).

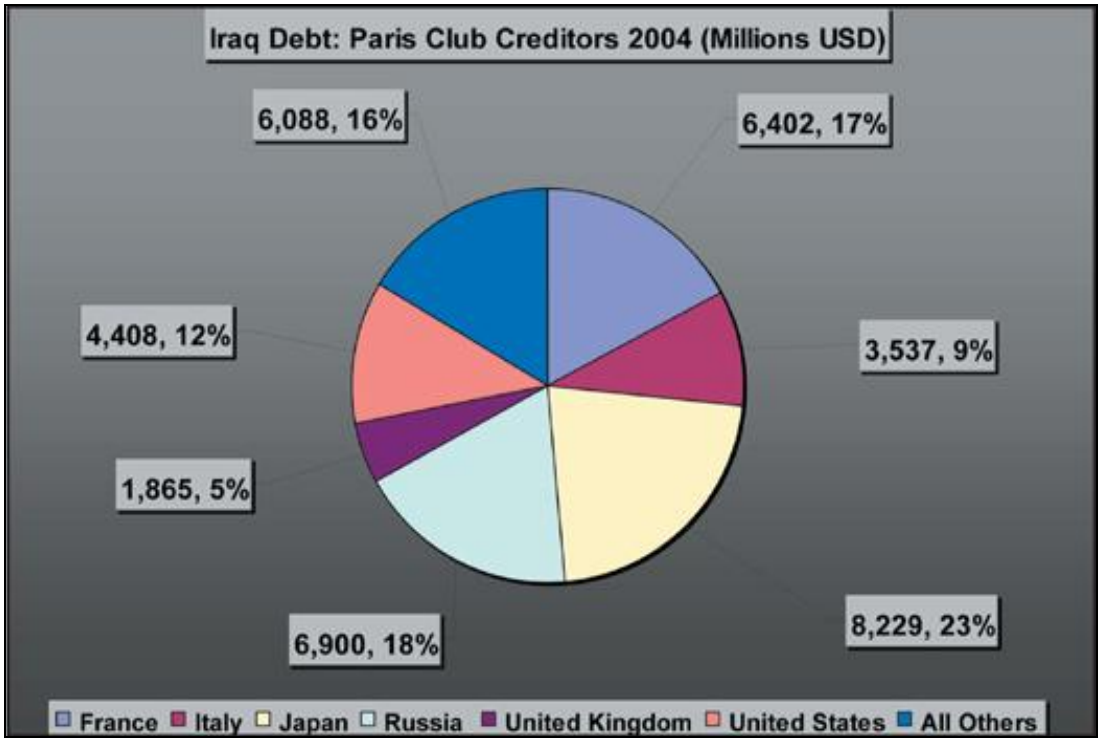

Figure 16: Iraq's Paris Club creditors.

Source: https://www.cia.gov/library/reports/general-reports-1/iraq_wmd_2004/chap2_annxD.html

The Arab Gulf States also offered loans to Iraq. Saudi Arabia, Kuwait, and United Arab Emirates provided $30-$40 billion. Saddam Hussein considered this money from the Arab countries as support for the sake of avoiding the spread of "radical Iranian fundamentalism," whereas the Arab countries considered the given money a loan. Figure 17 shows Iraq's debt from Non-Paris Club creditors (Central Intelligence Agency (CIA), Iraq economic data, 2004).

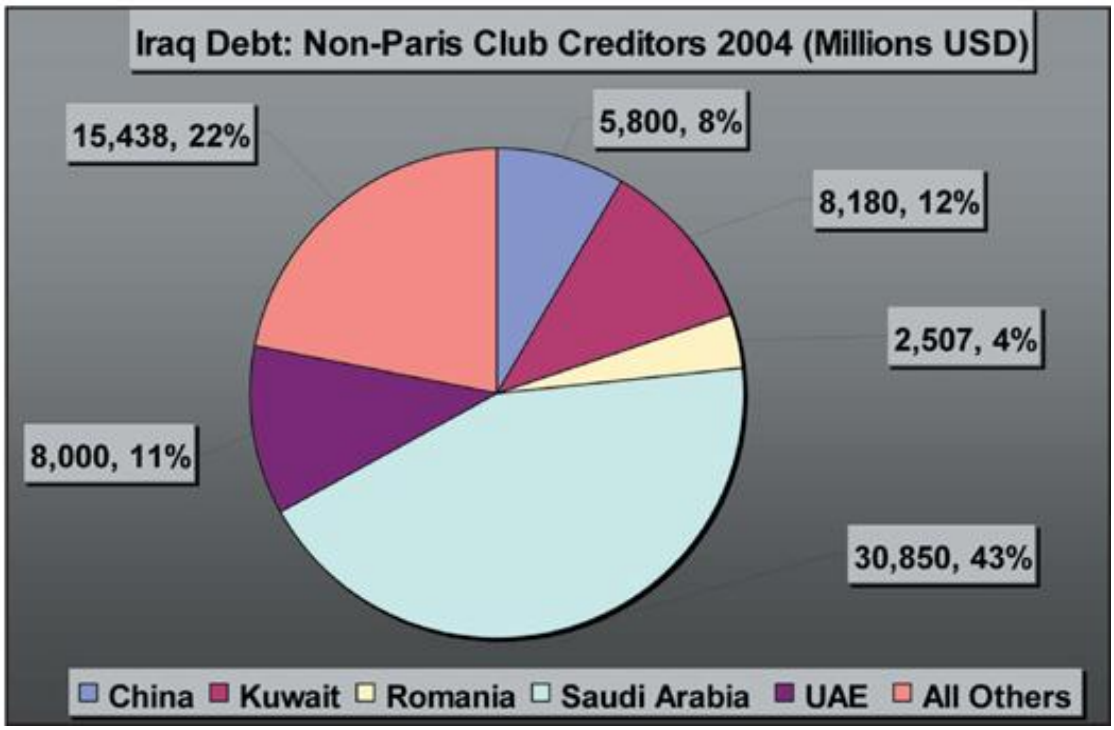

Figure 17: Iraq's major creditors Non Paris Club.

Source: https://www.cia.gov/library/reports/general-reports-1/iraq_wmd_2004/images/ch2_anxD_img06.jpg

Iraq faced a humanitarian crisis in addition to the two wars. In reaction to the Iraqi invasion of Kuwait, the United Nations pronounced sanctions against Iraq within 4

days. Hans Graf von Sponeck, who has served in the United Nations for 23 years, described the sanctions against Iraq as "the most comprehensive economic and military sanction ever." Although it was supposed to be lifted after 60 days following Iraq's full compliance with its disarmament obligation, the economic sanction lasted until the US/UK-led invasion in March 2003. The decade of sanctions affected the Iraqi people and children specifically; they paid dearly for their government's violent actions. Statistics show that 10.1% of Iraqi children were underfed and 22.9% were underweight during this period. After 1997, child mortality for children under 5 years of age rose from 100 to 131 deaths per 1000 live births. Furthermore, this sanction affected literacy, which decreased from 81% to 73.5%. This happened in Iraq, which was considered to have one of the highest per capita food availabilities in the Middle East prior to 1990. Iraq had a well-educated and wealthy population prior to Saddam Hussein's rule, but as consequences of wars and sanctions, the population became poor and had only limited education (Sponeck, 2005).

It can be concluded that Saddam Hussein's rule from 1979 to 2003 was characterized by dictatorship, control and misuse of oil revenue by the government, and insufficient social projects. All these factors demonstrate rent-seeking behavior. Furthermore, Iraq experienced a lack of transparency in revenue management, a decline in standard of living, decreased GDP, economic and military sanctions, a high rate of child mortality, and a decline in literacy rate. These social and political factors all illustrate that the oil was not a blessing but rather a curse for one of the world's oil-rich countries. So, The resource curse faced Iraq during Saddam Hussein's rule.

3.3 Post Saddam Hussein Era: Resource Curse?

After the fall of Saddam Hussein's regime, Iraq experienced a transitional period. The required transformation will take a long time. The former Interim Prime Minister, Iyad Allawi, on the occasion of the handover of sovereignty on 28 June 2004, stated, "The transformation from dictatorship to civil society is a major task likely to take many years." The transition is not only political but also economic. In this case, Iraqi's duties would be: "the immense task of rebuilding its institutions, its infrastructure, and the rule of law." Another critical task involved the Iraqi people's resolution of regional differences through conflict reconciliation. (UNHCR report, country of origin information, 2005).

To deal with the above challenges, the Iraqi government should promote the rapid growth of its economy. The economy is an essential factor for the country's political stability, security, reconstruction, and development programs. To accomplish this, the petroleum sector should be developed because it is a major share of the government's revenue. Other sectors, such as manufacturing and agriculture, should be developed as well.

Regarding agriculture, Iraq is now considered a major importer of agricultural products, in part because the agricultural sector is not performing well. Imported products in the past were wheat, rice, sugar, vegetable oil, and protein meals. Fifty percent of those products were imported in 1980, but imports rose to 80-100% in 2002. This increase still affects the agricultural sector, which will need years to recover. Iraq

will continue to depend on agricultural imports for the coming years to supply its needs. (Schnepf, 2003)

Because other sectors are performing poorly, Iraq's revenue depends most heavily on the oil sector for its economy. Oil accounts for approximately 70% of GDP, services make up 22%, industry is less than 1.5%, and farming decreased from 35% of the GDP in 1970s to 6.5% after 2003. Compared to Norway, Iraq's oil industry does not serve the other industries. Only 2% of Iraqis are employed in the oil sector; the other 98% of employees work in other sectors. Business accounts for 30% of the GDP. This does not provide work opportunities for Iraqis. They depend on the private sector instead, which is very small (Education for Peace in Iraq, EPIC, 2009). Thus, Iraq is facing Dutch Disease again.

Iraq's infrastructure was negatively affected by years of war and sanctions. The Iraqi people believed that the infrastructure would improve after Saddam Hussein's fall, but it got worse. Even now, there are serious troubles with water, sewer, power, and other key services. For instance, electricity is in short supply in the country; the electrical generating and distribution system lacks maintenance and faced years of neglect. In January 2009, only about 51% of the population say they have enough electricity at least some of the time; only 25% are somewhat or very satisfied with the available electricity. Figure 18 provides an explanation by showing the supply and demand of electricity in the country (Cordesman, 2010).

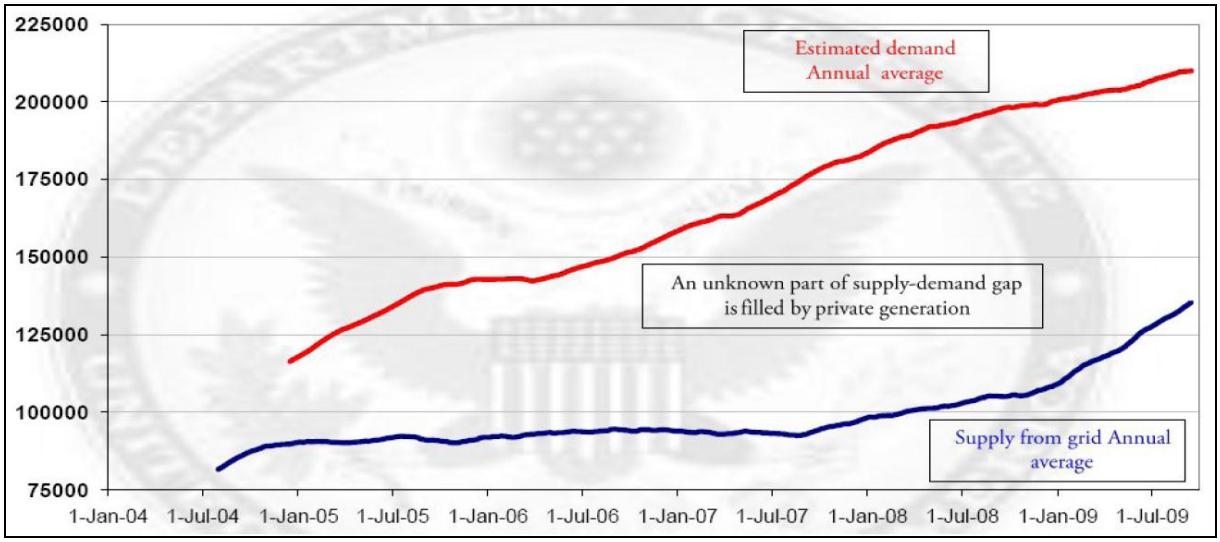

Figure 18: Supply and demand of electricity in Iraq.

Source: (Cordesman, 2010).

Regarding public services, water and sewage are problems as well. According to research by U.S. Department of Defense (DOD) issued in August 2009 (Cordesman, 2010, P.46):

> In April 2009, nearly 68% of Iraqi's reported being able to get safe, clean drinking water at least some of the time, indicating no significant change from January 2009. Although the majority of Iraqis can get safe drinking water, only 34 percent are satisfied with the availability of drinking water, a two point increase from January 2009. Only 46 percent of Iraqis state that they have a working sewage disposal system at least some of the time, down two percentage points from November 2007. The percentage of Iraqis satisfied with sewage disposal services is 29 percent, a three percent increase from January 2008.

Another issue that is an obstacle for Iraq's recovery is its debt. Iraq's Paris Club debt relief now totals nearly $42.3 billion (80% of total Paris Club debt). Approximately

$13 billion in debt relief from non-Paris Club countries and $20.9 billion in commercial debt relief was received as well. The remaining bilateral debt outstanding (including that owed to the Paris Club) is between $48.9 billion and $76.9 billion, according to the U.S. Treasury (Cordesman, 2010).

3.3.1 Transparency in revenue management

Following Saddam Hussein's fall, there has been no transparency in oil management and no public awareness of the government's revenue, economic data, payments, and expenditures. Iraq was ranked fifth from the bottom in the list of 180 nations in terms of transparency. In January 2010 Reuters reported that "Iraq joined a global transparency initiative Sunday in a bid to heal its reputation as a nation plagued by corruption and misuse of its vast oil wealth." (Reuters, Rasheed, 2010). This action will help increasing transparency in oil and gas revenue management, revealing the taxes and royalties that are paid to governments.

3.3.2 Challenges to Revenue Management: Internal Conflict

Iraq's revenue management challenges are due to the political, legal and constitutional issues that Iraq is experiencing today. The roles and powers of federal, regional, and government authorities in the Iraqi constitution are unclear and vague. The power and the roles are divided among the national government, the Kurdistan Regional Government (KRG), and other political actors. According to the Revenue

Watch[1] Middle East Director Yahia Said, "The most continuous issue in the legal framework is the division of authority between the federal center and regions." However, the concept of federalism is included in Iraqi constitution and law, but the Iraqi attitude toward oil sector legislation reflects regional differences regarding the authority of government to make decisions about revenues and oil policy (Blanchard, 2009). This creates an additional challenge to managing oil revenue.

At the same time, constitution Articles 111 and 112 state that Iraq's natural resources are the property of "all the people of Iraq in all regions and governorates" and that "the federal government, with producing governorates and regional government," shall undertake the management of oil and gas extracted from present fields These provisions were incorporated to promote agreement among Iraqis and to enable the adoption of the constitution (Blanchard, 2009). This ambiguity of Articles 111 and 112 creates different interpretations among the Kurds, and the Sunni and Shiite Arabs. The Kurds prefer regional power, whereas Sunni and Shiite Arabs prefer central government control over the distribution and collection of revenue. Therefore, there is no comprehensive national oil legislation unless Iraqis reconcile internally. This conflict in government is characteristic of rent-seeking behavior.

[1] Yahia Said, Director, Middle East and North Africa, Revenue Watch Institute, "Iraq Hydrocarbon Legal Framework" Statement Submitted to the House Subcommittees on the Middle East and south Asia and International Organizations, Human Rights and Oversight, July 19, 2007.

3.3.3 War damage and its impact on the petroleum sector

Aside from the social and political challenges to successful resource management in Iraq, other complicating factors result from war damage. The wars of 1980, 1991, and 2003 in Iraq affected oil production, which resulted in several declines in the economy, as explained in figure 12.

The wars affected not only oil production but also exports. Export routes were damaged and closed; for instance, the 1.65 million bbl/d pipelines to the south closed after the Persian Gulf War, and there are no plans to reopen them (Jaffe, 2006). Furthermore, since the 2003 invasion, pumping stations, pipeline webs, wells, refineries, and terminals have been major targets for terrorist attacks, and oil personnel have been killed. According to Iraq Pipeline Watch[2], since April 2003 insurgents have targeted oil facilities more than 220 times.

The war damage is overwhelming. Prior to formulating any investment plan or expected production potential, the oil infrastructure will need to be reconstructed and modernized, which will cost billions of dollars. These necessary budgetary and infrastructure limitations extend the time that this country will need to establish secure and stable condition for future projections on productivity estimates. Therefore, there is considerable uncertainty about infrastructure repair and development.

[2] Institute for the Analysis of Global Security (IAGS), Mar. 28, 2005. (http://www.iags.org/iraqpipelinewatch.htm)

Based on research that has been done to identify the resource curse, it can be concluded that Iraq has been in the resource curse for decades. Like Brazil, it might face another resource curse in the future, for the following reasons:

1- The current estimated reserves of 115 billion barrels and future exploration using advanced technology might reveal more reserves, which will increase production and exports. Eventually Iraq will receive significant income and revenue from exports. This energy boom in the oil sector will result in a temporary overvaluation of the local currency. Furthermore, Iraq is ignoring the other sectors and not promoting a diversified economy that includes agriculture and manufacturing. These factors will lead Iraq to face the Dutch Disease again.

2- Current situations, including internal conflicts over power, the lack of a clear and unified hydrocarbon law, corruption, and insufficient social and development projects, mean that Iraq will face rent-seeking behavior again.

3- Oil prices are not stable, and the demand changes globally. In the past, a single political decision, such as Iraq's invasion of Kuwait, affected the oil price all over the world. Current political situations in the Middle East, such as Libya, and the natural disaster (tsunami) in Japan have influenced the global market. The future is unknown and the situation is critical. Thus, the government could create programs for saving money from the oil revenue for the future, in case of decreasing oil price or unknown crises.

4- The lack of transparency and failure to use an advanced accounting system may cause Iraq to experience continuation of the resource curse.

5- Declines or slow improvement in social aspects such as deteriorating life expectancy, high infant mortality, and a high poverty rate (70% in 2009) will cause Iraq to continue to suffer the resource curse, if there are no rapid changes in these factors.

CHAPTER 4: AVOIDING THE RESOURCE CURSE

Political stability greatly influences any country's experience of the resource curse. In post-conflict environments like Iraq, it is not easy to avoid the resource curse. Sventlana Taslik, who is the director of the Open Society Institute's Revenue Watch, stated, "The challenges of avoiding the resource curse in Iraq will be doubly difficult."

The government should be able to manage its oil or gas revenue fairly and to gain the trust of its citizens. Le Billion (2008) stated that "The task of revenue mobilization, budget allocation, and expenditure management are bound together by political imperatives as well as economic logic. To collect revenues, the state must be seen as legitimate in the eyes of its citizens." Iraqis must develop political legitimacy and transparency in oil revenue expenditure through open budgetary and legislative processes.

Detailed studies and research are needed to evaluate successful models from other countries that best suit a particular country. In the previous chapters, Norway is discussed as an example of an oil-abundant country that avoided the resource curse. Transparency should be the starting point. Transparency reduces corruption and the ability of an authorized government elite to control and appropriate the revenue. Thus, Iraq can follow Norway's successful strategy.

Another successful strategy of Norway is the stabilization of funds or sovereign wealth fund (SWF), the Norwegian Government Pension Fund, which comes from oil

revenue. Many countries depend on SWFs to increase revenue and investment, as shown in table 7.

For the benefit of the citizens, there should be a direct distribution of revenue to the population. The Alaska model PFD Program (The Alaska Permanent Fund Dividend Program) is another example of a successful model to follow. It is "a method for returning a portion of the revenues from petroleum development to the citizens of Alaska as a direct cash payment." This amount is equally distributed to rich and poor citizens (Goldsmith, 2001).

Another strategy is economic diversification like that in Brazil , based on a wide range of profitable sectors. A diversified economy reduces economic instability, increases real activity performance, and promotes a sustainable, growing economy. All these factors will develop the stable political climate that Iraq requires.

Iraqis should agree internally on a comprehensive and clear Hydrocarbon Law that defines rights and a fair revenue division. The central and regional roles in the revenue collection should be clear, and the wealth should truly belong to the Iraqis, as stated in the law.

Overview of important SWFs worldwide

Country	Fund	AuM (USD bn)	Inception year	Source
United Arab Emirates	Abu Dhabi Investment Authority (ADIA)	875	1976	Oil
Singapore	Government of Singapore Investment Corporation (GIC)	330	1981	Non-commodity
Norway	Government Pension Fund - Global (GPFG)	322	1990	Oil
Saudi Arabia	Various funds	300	NA	Oil
Kuwait	Kuwait Investment Authority (KIA)	250	1953	Oil
China	China Investment Company Ltd.	200	2007	Non-commodity
Hong Kong	Hong Kong Monetary Authority Investment Portfolio	140	1998	Non-commodity
Russia	Stabilization Fund of the Russian Federation (SFRF)	127	2003	Oil
China	Central Hujin Investment Corp.	100	2003	Non-commodity
Singapore	Temasek Holdings	108	1974	Non-commodity
Australia	Australian Government Future Fund (AGFF)	50	2004	Non-commodity
Libya	Reserve Fund	50	NA	Oil
Qatar	Qatar Investment Authority (QIA)	40	2000	Oil
United States	Alaska Permanent Reserve Fund Corperation (APRF)	40	1976	Oil
Brunei	Brunei Investment Agency (BIA)	35	1983	Oil
Ireland	National Pensions Reserve Fund (NPRF)	29	2001	Non-commodity
Algeria	Reserve Fund	25	NA	Oil
South Korea	Korea Investment Corporation (KIC)	20	2006	Non-commodity
Malaysia	Khazanah Nasional BHD (KNB)	18	1993	Non-commodity
Kazakhstan	Kazakhstan National Fund (KNF)	18	2000	Oil, gas, metals
Canada	Alberta Heritage Fund (AHF)	17	1976	Oil
Taiwan	Taiwan National Stabilisation Fund (TNSF)	15	2000	Non-commodity
United States	New Mexico State Investment Office Trust Funds	15	1958	Non-commodity
Iran	Foreign Exchange Reserve Fund	15	1999	Oil
Nigeria	Excess Crude Account	11	2004	Oil
New Zealand	New Zealand Superannuation Fund	10	2003	Non-commodity
Oman	State General Stabilisation Fund (SGSF)	8.2	1980	Oil, gas
Chile	Economic and Social Stabilization Fund (ESSF)	6.0	2007	Copper
Botswana	Pula Fund	4.7	1993	Diamonds et al.
United States	Permanent Wyoming Mineral Trust Fund (PWMTF)	3.2	1974	Minerals
Norway	Government Petroleum Insurance Fund (GPIF)	2.6	1986	Oil
Azerbaijan	State Oil Fund	1.5	1999	Oil
East Timor	Timor-Leste Petroleum Fund	1.2	2005	Oil, gas
Venezuela	Investment Fund for Macroeconomic Stabilization (FIEM)	0.8	1998	Oil
Kiribati	Revenue Equalisation Reserve Fund (RERF)	0.6	1956	Phosphates
Chile	Chile Pension Reserves Fund	0.6	2007	Copper
Uganda	Poverty Action Fund	0.4	1998	Aid
Papua New Guinea	Mineral Resources Stabilization Fund (MRSF)	0.2	1974	Minerals
Mauritania	National Fund for Hydrocarbon Reserves	0.0	2006	Oil, gas
United Arab Emirates	Dubai Intern. Financial Centre Investments (DIFC)	NA	2002	Oil
Angola	Reserve Fund for Oil	NA	2007	Oil
Total		***3,190.00***		
Memorandum items: Planned SWF projects				
China	State Foreign Exchange Investment Corporation (SFEIC)	200	2007e	Non-commodity
Russia	Future Generations Fund of the Russian Federation (SFRF)	32	2008e	Oil
Bolivia	(Establishment of SWF planned)	NA	2008e	Oil
Japan	(Establishment of SWF presumed)	NA	NA	Non-commodity
Total incl. Memorandum items		*3,422.00*		

Table 7: List of the major SWFs worldwide, including estimates of the values of assets they manage as reported by public sources, as well as the respective year of inception and the source from which their funds are reported to be drawn.

Source: Kern, 2007.

Iraq should create a market-friendly environment to attract foreign companies to invest their money in the country. A relationship should be developed with foreign companies to expand Iraq's role in the international market. This can be achieved by improving investment law and developing a more realistic picture about how an internationally competitive bidding system will work (Cordesman, 2010). Foreign companies will be eager to invest in country if the security and safeguards are provided to prevent diversion of oil and refined products.

Iraq should take immediate action to provide good public service. Citizens are protesting in different parts of Iraq demanding their rights. One of these requirements is good public service. One of 1000 protesters, Ali Hassan, a resident of Diayala, which is 15 miles northeast of Baghdad, said, "Our children have many diseases because of sewage problems and accumulated trash in the area." (Abdul-kadir, The Seattle Times, 2011). This is a simple example of poor public service by a government that should be able to provide for the basic human needs of its citizens.

The current government should introduce strategies of revenue management, and train experts and provide advanced training to management staff.

With the financial resources provided by oil revenue, the government should improve the overall quality and capacity of services for its citizens including educational systems and health programs. People had their share of years of wars and sanctions. If their living condition does not improve the people will not accept

the government's authority. Iraqis have now lived seven years without a dictator; they will continue to seek additional freedom and the benefits of a wealthy country. The inspiring wave from Tunisia, Egypt, and Libya is likely to encourage Iraqis to demand their rights.

CHAPTER 5: CONCLUSIONS

Many oil-rich countries suffer from poverty, corruption in their government, dictatorship, Dutch Disease; rent-seeking behavior, high rate of infant mortality, and low rate of transparency in the government and oil revenue management. These countries fall into the natural resource curse. However, it is possible for an oil-rich country to escape the resource curse and turn oil into a blessing to its nation.

Norway did not fall into the resource curse after the oil discovery, because its leaders used effective strategies, economic diversification, social plans, stabilization funds, and transparency in oil management.

Brazil was challenged by the resource curse but then started to grow economically, used trade liberalization strategies, and followed successful models like those in Norway to promote their oil revenue management. However, the new oil discoveries may cause Brazil to face the resource curse again. The Brazilian government is attempting to resist the possible resource curse by stabilizing the inflation rate, decreasing public debt, and implementing forward-looking strategies.

Nigeria and Iraq are victims of the resource curse; they have both experienced poor economic growth, dictatorship, waste of oil revenue by ruling officials, and an increased poverty rate.

In Iraq, the curse started when Saddam Hussein took over in 1979. The country experienced wars, poverty, and sanctions, and the country is in debt. After Saddam Hussein's reign, the country remains in the resource curse. The problems of the country include insecurity, lack of transparency in revenue management, lack of public services and war damage that affected the petroleum sector. Therefore, Iraq has not grown economically like Norway has, and it remains in the curse like Nigeria. The country stepped back instead of developing and competing with the advanced oil rich countries like Canada and the U.S.A.

Iraq's 115 billion barrels of reserves cause it to rank 4th in the world. As did the new oil discoveries in Brazil, this oil wealth might create a sudden boom in Iraq and cause it to continue to be in a resource curse. So, the question is, will Iraq escape the resource curse? This will be a challenging task for the Iraqi government while the country is in a transitional period from dictatorship to democracy.

Oil-rich countries that have unstable political situations tend to be cursed like Iraq, Nigeria, and Brazil for a period of time. One of the reasons that Norway escaped the curse is because of its stable political situation and lack of conflict. The way for Iraq to escape the recourse curse is to:

- Establish political stability as soon as possible.
- Gain its citizens' trust and be legitimate in their eyes by fair and transparent revenue management.

- Follow successful models like Norway or even compete globally and follow strategies that countries like the U.S.A. and Canada use.
- Resolve internal conflict and pass a new comprehensive hydrocarbon law that defines the rights and authorities of the majority and minority groups.
- Diversify the economy and revive agriculture and manufacturing sectors.
- Create employment opportunities.
- Create a market-friendly environment to attract foreign investment and maintain security in the country.
- Provide public services and improve educational systems and health programs.
- Improve overall quality of the governmental institutions and provide advanced training to the staff.

This is a long list of difficult tasks, but if the government fails to take action and provide the above, the country will not escape the resource curse.

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VITA

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Saya was always interested in studying abroad to complete her higher education. She worked for the University of Sulaimani, the United Nations, and a construction company in the fields of administration and accounting. She decided to continue her geologic education in the United States when she realized that it would be important for her country.

She enrolled in the Jackson School of Geosciences in 2009. Her advisor and her experience during an internship in the summer of 2010 have further motivated her to work as a geologist in her future career.

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